



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,706	05/03/2005	Duane R. Romer	62619A	8626

109 7590 10/25/2006

THE DOW CHEMICAL COMPANY
INTELLECTUAL PROPERTY SECTION,
P. O. BOX 1967
MIDLAND, MI 48641-1967

EXAMINER

LEE, RIP A

ART UNIT PAPER NUMBER

1713

DATE MAILED: 10/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/533,706

Applicant(s)

ROMER ET AL.

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06-23-2005</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites a composition comprising a “transition metal complex capable of being activated” and a “compound able to render.” The terms capable and able to render claim vague and indefinite because it is not clear whether said complex is actually activated in the claimed composition and because it is not clear whether said compound actually renders the complex active in the catalyst system. Amendment of claims to obviate use of these terms is suggested.

3. The general content of the instant claims appears to be novel over the prior art. The novel feature of the invention is use of component (c) in a catalyst composition. This component is a group 13 compound is a containing one hydrocarbyl(silyl) group and two dihydrocarbylamido groups (general formula $R^aM(NR^b_2)_2$), or a bridged dinuclear species (formula (2)).

The closest reference is Rosen *et al.* (U.S. 6,017,842) which teaches a use of a catalyst comprising a metallocene complex, activator, and a group 13 compound containing two hydrocarbyl groups and one dihydrocarbylamido group (general formula $R^a_2MNR^b_2$). Clearly, the compounds disclosed in Rosen *et al.* do not meet the structural features set forth in the instant claims.

Use of compounds of general formula $R^a_2MNR^b_2$ as catalyst components in Ziegler-Natta systems is well documented in Langer *et al.* (U.S. 4,224,182) and Sasaki *et al.* (U.S. 5,215,951).

Art Unit: 1713

Kearby *et al.* (U.S. 3,255,169) discloses use of $\text{HAl}(\text{NHEt})_2$ for preparing Ziegler catalysts, and GB 1,135,681 teaches the preparation of *tris*(dialkylamide) complexes of aluminum, $\text{Al}(\text{NR}_2)_3$, for use as a co-catalyst.

Renkema *et al.* (WO 96/15161) discloses a catalyst comprising a transition metal complex and a compound of formula $\text{R-Al}(\text{X})_v(\text{NR}^1\text{R}^2)_w$. It may be argued that the broad description of $\text{R-Al}(\text{X})_v(\text{NR}^1\text{R}^2)_w$ includes compounds recited in instant claims (in the case where $v = 0$). There is no specific disclosure of compounds of the type $\text{R}^a\text{M}(\text{NR}^b)_2$, and the working examples of Renkema *et al.* disclose only a vague synthetic process for making the compound $\text{Et}_{1.5}\text{AlCl}(\text{NR}^1\text{R}^2)_{0.5}$, which does not meet the structural requisites of the instant claims. Therefore, it is maintained that one having ordinary skill in the art would not have found it obvious to arrive at the claimed compounds based on the contents of the prior art. Moreover, the catalysts do not contain suitable activator, as required in the instant claims.

None of the cited references teaches or fairly suggests a catalyst comprising a group 13 compound having general formula (2).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

ral

October 17, 2006



DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700